GEOGRAPHIC SCHOOL BULLETINS

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VOLUME XXXVI, NUMBER 27, APRIL 28, 1958 . . . *To Know This World, Its Life*

W. ROBERT MOORE, NATIONAL GEOGRAPHIC STAFF

MEKONG SAMPAN, largely built of riverbank bamboo, is home to a Laos boatman.

► The Mysterious Mekong

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► Italy's Val d'Aosta

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rivers that are destined for greatness, the Salween and the Yangtze. Topography forms a bottleneck that they race through, neck and neck. At one point, only 12 miles separates the Salween from the Mekong. Strange that such close neighbors eventually end up in three different seas, hundreds of miles apart.

Winds howl through deep corridors cut by the roaring torrents. Massive rock slides shake the ground. Giant rhododendrons often sprout from near-vertical cliffs, shading the tumultuous young streams below. Joseph F. Rock, leader of a National Geographic Society expedition, crossed these deep, inhospitable river trenches in the 1920's. His pictures of the infant Mekong, right, are among the few to reach the Western World.

The Burma Road, famed in World War II, leaps one such Mekong gorge on a suspension bridge. Other crossings may consist of a strand of bamboo rope slanting from a high point on one canyon wall to a low point on the other. Around this primitive cable, greased with yak butter, fits a hollow log with a rickety chair slung beneath it. Daring travelers take a seat and whiz downhill across the misty chasm, praying that the fraying rope won't snap.

Gradually, the grip of the terrain relaxes as the rivers rush south along the China-Burma border. The Yangtze veers away to serve the heart of China and spill its floods into the East China Sea. Then the Salween drops into Burma, aiming for the Andaman Sea, a branch of the Bay of Bengal. Left alone, the Mekong begins its probe of Indochina on its own. The divide between it and the Salween is a natural boundary for plants, animals, and human races. East of the divide, in the Mekong basin, these living things are mostly of Chinese origin. West of it, in the Salween basin, they bear the Indo-Malayan stamp.

Spreading wide, the Mekong forms the border between Burma and Laos, then much of the boundary between Laos and Thailand. It washes over broad sand bars where flecks of gold await the prospector's pan, where sapphires and other precious stones lie among the pebbles. Tigers pad silently through the canebrake along its banks. Elephants trumpet distantly. In one wild spot, volcanic vents spout steam above the swirling current.

The Mekong skims past Vientiane, capital of Laos. Near the city, a dam will rise, according to the new project. It will back up the waters for irrigation, navigation, and provide hydroelectric power.

The river's potential as a source of power is huge. At one point, a series of falls and cascades eight miles across, the river hurtles down a 70-foot descent with a volume per second nearly double that of Niagara Falls.

Slicing through the heart of Cambodia, the Mekong drains the whole nation and

JOSEPH F. ROCK

NATIONAL GEOGRAPHIC PHOTOGRAPHER J. BAYLOR ROBERTS

The Mysterious Mekong

PLANS are under way to tame one of the wildest and least known of the world's great rivers. The mighty Mekong rises among snowbound peaks along the border of Tibet and western China. It rolls southeastward, cutting through the bulge of Indochina, draining an area far bigger than all of Texas, then ending its 2,600-mile jaunt in the South China Sea. Its mountainous upper regions are weirdly beautiful and barely explored. Its lower stretches sweep through the rice basket of some 17,000,000 people.

A pettish giant, it condescends to irrigate rice paddies in its huge delta, but often, disastrously, it swells and shrinks with the seasons as if shrugging off responsibility. Along most of its length it snubs efforts to navigate it, though travelers, like those above, depend on crowded ferries and canal boats to trespass on its broad mouth.

If plans now before the United Nations mature, the giant's unpredictable personality is in for a change. The project under scrutiny would harness the lower Mekong, control its floods, open it to shipping, and turn it into a "T.V.A." of Southeast Asia.

So far, man is too puny an animal to do much about the upper river. Born 16,700 feet high, in earth's most mountain-crumpled corner, it plunges south through deep, narrow gorges, scarring the plateau of western China's rugged Yunnan Province.

As if seeking companionship, the Mekong clings close to two other young

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as part of the Mekong project, to regulate this natural reservoir.

Below Phnom Penh, the Mekong becomes tidal—a swampy, turgid stream as thick with leeches as the air is filled with mosquitoes. It moves sluggishly, its waters as serene as a lagoon's. Bamboo thickets line its shores. Beyond lie hot green fields. Thatched sampans ply the river, navigating around teak logs that are floating down to Saigon's region.

Tethered ducks swim alongside the boats. Children play on deck—bamboo floats lashed to their waists to keep them afloat if and when they fall in.

Churning down into the southern tip of South Viet Nam, the Mekong splits into three great arms. Brown water seeps through a delta the size of the state of Connecticut, and in its soggy silt grows rice—one of the greatest and richest concentrations of the crop in the world.

In settled lands, every great river has a city near its mouth. The Mekong has Saigon, big, busy capital of South Viet Nam. Though it does not lie on the river, Saigon perches at the eastern edge of the Mekong delta, shipping rice to the world.

The day may come, not too far off, when larger vessels plow upstream to buy the produce of freshly irrigated farms. Enriched at last by the river that has spurned them for so long, the farmers along its lower banks may find themselves reading at night by electric light. E.P.

ALONG THE SHORE of Cambodia's Tonle Sap (fresh-water lake) mysterious Khmers built their ancient capital, Angkor Thom. Ruins rise from the shrouding jungle, their old meaning lost. Below, the Cambodian Royal Ballet performs symbolic dances on the terrace of the ornate Khmer temple, Angkor Wat.

TRUMAN BAILEY

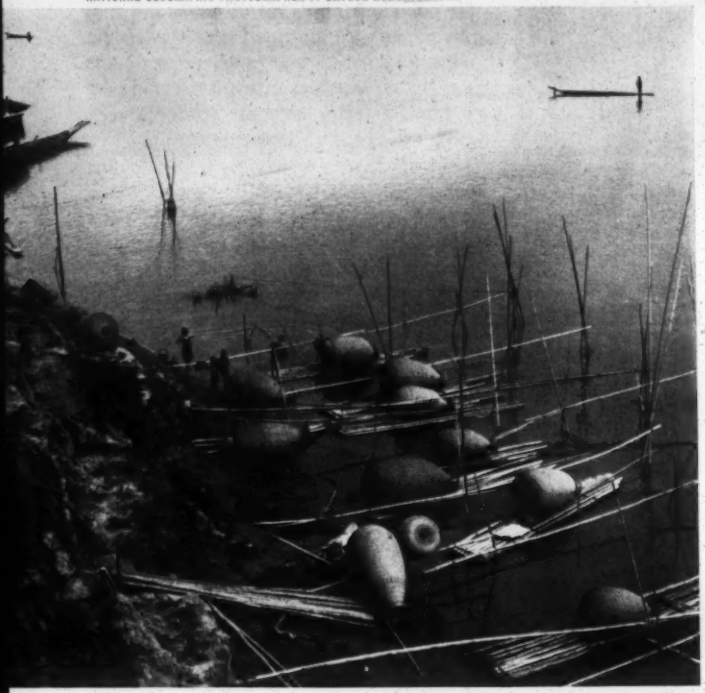
UMI

NORMAN SOONG, BLACK STAR

WATER LEVEL of the Mekong varies so widely that river boatmen face little security. Those at the right, in Laos, are temporarily grounded by the dry season. As it grows shallow, the river develops dangerous shoals and rapids that bar navigation. So boats are hauled ashore and simple, knock-down huts built beside the stream. The Mekong project would keep much of the river at a nearly constant level, easing the burden of families like this. One early suggestion was to dig a canal across the broad, shallow basin of Thailand to link with the Mekong at Vientiane. This would put a new control on river floods.

laps through the capital, Phnom Penh. Here it meets a channel connecting it with Tonle Sap, Cambodia's huge inland lake. During dry season—about six months—the inland lake drains down its channel and into the Mekong. But when rains come, the channel reverses its flow. Backwash from the swelling river gurgles into Tonle Sap. The lake grows from an area of about 100 square miles to some 750 square miles. Depth increases from five to 50 feet. A dam system is proposed

NATIONAL GEOGRAPHIC PHOTOGRAPHER J. BAYLOR ROBERTS



FISH TRAPS, made from bamboo strips knitted into a jar shape, line villages along the Mekong as it passes through Laos. Near Vientiane, boats moor beside a cliff some 30 feet high during the dry spring months. In the rainy season, the river laps over the top of the bank. The river here is too broad for this photograph to show its full width. Even at low stage its water volume is immense—but mostly wasted except in South Viet Nam's rice bowl.

(right) used in signing the Monroe Doctrine lay undiscovered for 75 years after the owner's death. That would certainly have tickled Monroe's sense of humor. No sobersides, he sometimes sat at festive tables beating time to music with his fork. Once he laughed at a comical parody " 'till he cried."

Monroe's boyhood memories of the Virginia countryside pulled at the aging man. While President, he built his dream home, Oak Hill, (below) in pasture-green Loudoun County, Virginia. His versatile friend Jefferson, architect of Monticello, the University of Virginia, and the white-columned State Capitol, designed the house. James Hoban, designer of the White House, was the builder. In stateliness it stands today, privately owned, amid 2,000 rolling acres that wash against western hills.

People, somehow, could never entirely release Monroe from service. The two-time President, in a final stewardship, became Loudoun's Justice of the Peace. Long and honest public service ironically left him impoverished. On his Republic's 55th birthday, July 4th, 1831, he died in New York City, where he lived with a daughter. S.H.

OAK HILL, below, was built soon after James Monroe began his second term as President in 1821. It was while staying in his new home, in 1823, that the fifth President incorporated the ideas of the Monroe Doctrine into his annual message. Though Oak Hill, in Virginia's piedmont, is Monroe's remembered home, he was born miles away in tidewater Westmoreland County. Today, a special stamp is being issued at the county seat, Montross, as the James Monroe Memorial Foundation marks the Virginian's 200th birthday.

PHOTOGRAPHS FROM THE JAMES MONROE MEMORIAL FOUNDATION

UMI

James Monroe

VERSATILE VIRGINIAN WAS 'LAST OF THE COCKED HATS'

FROM far down America's past, his name re-echoes in the phrase, Monroe Doctrine. But James Monroe erected other milestones that still stand on this April 28th, the 200th anniversary of his birth.

He and George Washington shared honor as the only Presidents who fought in the Revolution. He served as Secretary of War and State simultaneously throughout the War of 1812. The Louisiana Purchase and cession of Florida—enormous additions to the original 13 Colonies—showed his diplomatic handiwork. He nudged Great Britain toward agreement to a United States-Canadian boundary line along the 49th parallel to the Rocky Mountains. And at his second bid for the Presidency he carried every State. Such substantial accomplishments probably didn't surprise the folks back home.

Home, to Monroe, was that same Virginia countryside, cut by the Potomac and Rappahannock Rivers, that raised so many boys fated for fame—among them George Washington and Robert E. Lee. John Marshall, later great Chief Justice, became Monroe's early schoolmate. Greek, mathematics, and Latin were their lot, sturdy scholastic foundations for future careers as statesmen of their country.

At the College of William and Mary, in Williamsburg, Virginia, Monroe heard the town crier tell of the battles of Lexington and Concord. Students, even some professors, shouldered flintlocks and drilled in full view of the last British governor. Their officer: Patrick Henry, who wanted "Liberty or Death."

Monroe fought a long, tough war. He suffered through defeat at White Plains, endured the retreat down New Jersey, crossed the Delaware with Washington, and took a musket ball he carried in his shoulder until death. He shared the misery of Valley Forge. At Brandywine, he helped the wounded Lafayette from the field, forming a lasting friendship with the gallant Frenchman. With war behind, he read law under Thomas Jefferson, cementing another lifelong bond.

Monroe became the fifth President in 1817, bringing to the office more lawmaking experience than any Chief Executive except Jefferson and John Quincy Adams. He had been a Virginia legislator and governor, member of the Continental Congress, member of the Virginia Convention to ratify the Constitution, United States Senator, Minister to France, Spain, and England, and a Cabinet member. Through it all, ever-visible qualities stamped his character—self-effacement, reliability, and loyalty.

He was deeply set in his ways, enough so to be called "the last of the cocked hats" for clinging to the Revolutionary mode of dress. A White House guest remembered him as "tall and well-formed. His dress plain and in the old style, small clothes, silk hose, knee-buckles and pumps fastened with buckles."

He treasured exquisite tableware, fine books, and a bronze bust of Lafayette, given by him as a token of lifelong esteem. A secret compartment in the Louis XVI desk

VAL D'AOSTA

MOUNTAINS towering higher than 13,000 feet dwarf the spire of the church at Cogne, in Val d'Aosta. Built on steep slopes, rich in iron ore, Cogne is the mining center for this nearly self-governing region in Italy's northwest corner. Long a buffer region, the valley of Aosta was claimed by France after World War II. Italy retained it and made it one of the new regions set up by the post-war Italian constitution ratified in 1948. Italian officialdom calls it Valle d'Aosta, but the valley dwellers themselves use the French form.

DONALD MCLEISH

THE REPUBLIC of Italy contains 20 regions—political and geographic subdivisions. Six of them enjoy the special privilege of largely looking after their own affairs. The island regions of Sicily and Sardinia, for example, are allowed about the same amount of self-government as New York State—or any other of the forty-eight.

Little Val d'Aosta, tucked into Italy's northwestern corner, against France and Switzerland, is one of these autonomous regions.

The tumbling Pennine and Graian Alps isolate the Valley of Aosta. Almost as thoroughly as the Mediterranean does Sardinia. Mont Blanc looms in the west, the Matterhorn spikes the northeastern horizon. Roads wind into the central city of Aosta from two famed mountain passes—Grand St. Bernard, leading into Switzerland, and Petit St. Bernard, a lofty doorway to France. Smaller than Delaware, Val d'Aosta supports about 100,000 people.

Strangely, these Italians speak French. Their surroundings give them the attitude of their Swiss neighbors. They could easily be part of either of the bordering nations. But the Italian government gives them authority over their own schools, forests, roads, and local police force. They collect a useful income from rich resources of iron ore (above), as well as coal and quarrying.

Prosperous and self-sufficient, some citizens of Val d'Aosta nourish a lingering dream—eventual total independence from Italy. After all, look at Andorra, Monaco, and San Marino, all "postage stamp" countries. E.P.

UMI

NATIONAL GEOGRAPHIC PHOTOGRAPHER J. BAYLOR ROBERTS

Buckwheat, Colonial Crop, Still With Us

"BUCKWHEAT cakes—they sets on your chest and nourishes you all day long." So a burly logger once proclaimed. Regardless of his accuracy, all would agree that buckwheats, dripping with syrup, make the morning as bright as the buckwheat-blossoming field above in Pennsylvania's Lancaster County.

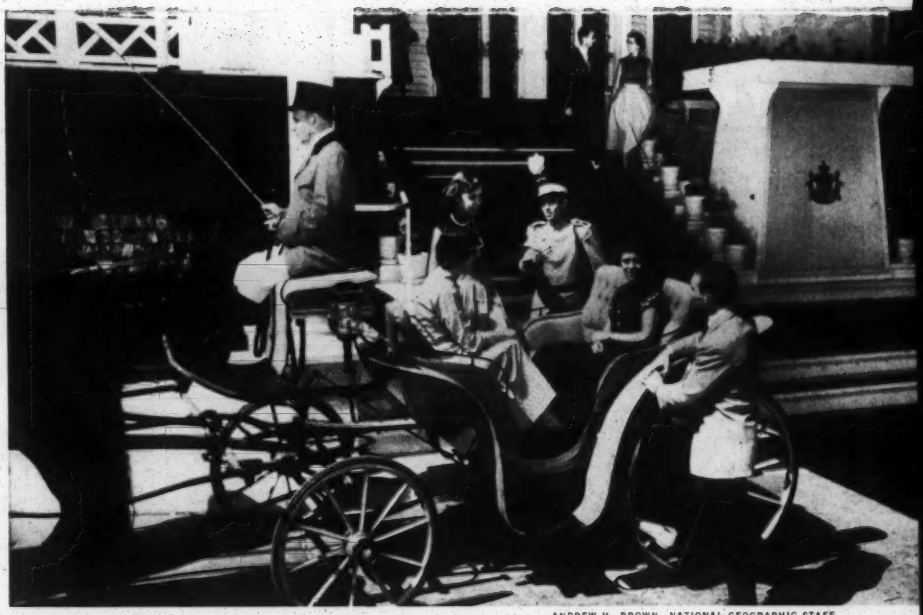
Oddly, this traditionally American breakfast food probably originated in China. The crop found its way to Europe in the Middle Ages, thence to America. (See, on page 336, how plants travel.)

Buckwheat serves the farmer as a cover crop and weed smotherer. It flourishes on poor soil, enriching it when plowed under. Its straw and kernels vitalize poultry feed and give bedding to cattle.

Medicinally, buckwheat is a source of the drug rutin, strengthener of capillaries threatened by high blood pressure. But for most people, it still means breakfast.

GORDON IRVIN

BUCKWHEAT in bloom near Wellsboro attracts National Geographic staffmen on a field assignment in Pennsylvania. The sweet-scented blossoms also lure bees, which make honey to go with griddlecakes. Buckwheat use is declining. Americans don't eat the staggering breakfasts of old. New York and Pennsylvania still lead production, but the herb with the beechnutlike kernel has also been a favorite out West ("The buckwheat cake was in her mouth, the tear was in her eye"—*Oh Suzanna)* and down South ("Buckwheat cakes an' Ingun batter, makes you fat or a little fatter"—*Dixie*).



ANDREW H. BROWN, NATIONAL GEOGRAPHIC STAFF

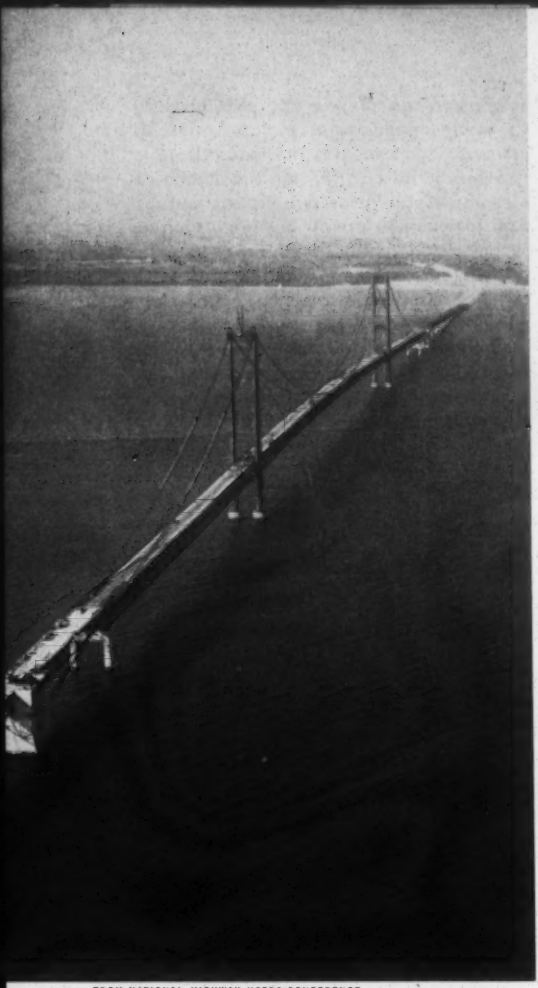
Wisconsin than Michigan are shifting their gaze southward from whence cometh the tourist. Road frontage in some sections has already jumped from $5 to $30 a foot. Undeveloped woodland brings $600 rather than $100 for a 40-acre tract. Roadways sprout new motels, restaurants.

One famous Upper Peninsula resort waits unruffled for the expected tourist influx. Mackinac Island—"Great Turtle" to the Indians—is a practiced host. Visitors park their cars at St. Ignace, take the boat to the island, which allows no autos. Hundreds of horse-drawn buggies, like this one loading pretty passengers in front of the dignified Grand Hotel, take up the slack.

Once a trading post for John Jacob Astor's American Fur Company, the island is no stranger to prosperity. Astor's company, employing 2,000 *voyageurs* and 400 clerks, cleared $3 million in a single year, 1822. Now, Mackinac Island will be joined by the whole sprawling Upper Peninsula as a vacation spot for adventuring tourists. A.P.M.

F. ELEANOR CHAMBERS

ISLAND VISITORS make acquaintance with both past and present. Standing next to part of worn wall of Old Fort Mackinac, one-time British outpost, they gaze across roofs of island homes toward Lake Huron. Out on the water, banana-shaped ore boats from Minnesota's Mesabi Range plod toward Straits of Mackinac, pass beneath the bridge, bound for fiery steel furnaces at Gary or East Chicago, Indiana.



FROM NATIONAL HIGHWAY USERS CONFERENCE

Michigan's Northern Gateway

Giant Mackinac Bridge Stitches State Together

SIX FOOTBALL fields longer from anchorage to anchorage than San Francisco's Golden Gate, Mackinac Bridge plants its concrete suspension piers deep in bottom bedrock. An engineer's Paul Bunyon, it is built to stand firm despite howling winds aloft, the cold shouldering of winter's ice at the waterline. Roadway hangs from giant cables, each consisting of 37 strands of 340 carbon steel wires per strand. Designer of "the bridge that couldn't be built," David B. Steinman, has created more than 300 bridges on five continents.

IN 1883, the year the Brooklyn Bridge was born, a store owner in St. Ignace at the northern side of the narrow Straits of Mackinac (pronounced *Mackinaw*), pasted a picture of New York's new span on his store front. With a soft pencil he scrawled at the bottom: "*Proposed bridge across the Straits of Mackinac!*"

The dream of the store owner, shared by thousands of residents of Michigan and the central United States, was not in vain. For this June—75 years later—the Governor of Michigan will dedicate its tangible result, the soaring span above.

Early skeptics of what is now the world's longest suspension bridge said the structure "would lead from nowhere to nowhere." In actual fact, it already is opening to the main stream of industrial progress the state's entire Upper Peninsula, a sparsely peopled territory half again as large as Maryland, bigger than Belgium.

The first car to roll across the five-mile bridge last November effectively stitched together two long-divided parts of Michigan. Tomorrow's motorist, heading for Canada's north woods or skirting the Great Lakes, will slice hours off his driving time. Avid deer hunters and week-end fishermen need not fidget impatiently for long hours waiting for a ferry. In the Upper Peninsula, residents look at their green land with new eyes. People who once considered themselves more a part of neighboring

CONSIDER the peach.

Pink-cheeked and bursting with mellow flesh and heavy-sugared juice, it tempts us on orchard branch and in supermarket basket. We buy millions of bushels a year, eating the fruit whole and prepared a dozen different ways.

But is this the full story of the peach? Where did this succulent fruit come from? Did these pink blossoms always add delicate color to America's hillsides in springtime? Does the fuzz serve any useful purpose?

The National Geographic Society's book "*The World in Your Garden*" answers such questions about all our familiar fruits. The geographic romance in their life stories will amaze you.

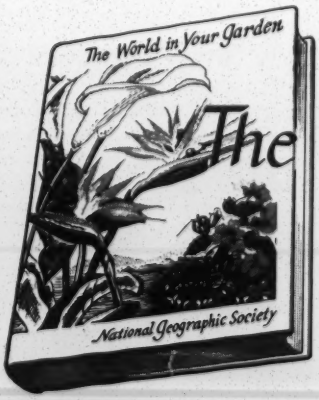
For instance, man long thought the peach originated in Persia (the name is based on a Latin word meaning Persian). But modern botanical sleuths traced the plant eastward to China, where it had been mentioned in literature earlier than 2,000 B. C.

Sometime long before Christ the caravan trails of central Asia witnessed the peach's migration to Persia (modern Iran). By 332 B. C. it had reached Greece, whence it spread over Europe.

Spaniards first introduced it to the New World. French and English likewise planted peaches almost as quickly as they planted colonies. In time, seedlings sprang up in all sections. Best varieties today stem from choice seedlings, systematically bred to improve commercial qualities.

The fuzz? Oh, yes. It baffles insects, fends off disease, and helps prevent cracking. Nectarines, smooth-skinned peaches, do not enjoy the same protection.

The 232 pages of this book—lavish with color illustrations and paintings—also include our traveling flowers and vegetables, with complete biographies of each plant. A fascinating introduction spells out "The Romance of Plant Discovery."



The World in Your Garden

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